

C L A I M S

1. Process for forming tubular labels made of heat shrinkable films and adhering them on bottles or containers, characterized by the fact that it provides the insertion of the bottles or containers into the formed tubular labels.

2. Process for forming tubular labels made of heat shrinkable films according to claim 1, comprising: the steps of unwinding and cutting a heat shrinkable film from a reel for obtaining precut labels having a length slightly longer than the cross-section perimeter of the bottle; the step of transferring the precut label by a drum provided with areas for drawing the precut label, characterized by the fact it comprises the additional steps of:

- winding the precut label on a rotating tubular-shaped plate supporting the container or bottle to be labelled;
- sealing both vertical overlapped ends of the precut label in a predetermined position for obtaining a tubular label, said sealing step comprising heat sealing or adhesives;
- removing the label from the tubular plate and transferring the plate and the container on it in order to insert the latter into the tubular label in

the position in which the label will be located;

- heating the container to heat shrink the label on the container.

3. Process according to claim 1 and 2
5 characterized by the fact the step of winding the precut label on the tubular plate is performed by establishing a negative or positive air pressure on the side surface of the plate.

4. Process according to claim 1 and 2
10 characterized by the fact the step of removing the tubular label from the tubular plate is performed by establishing a pressure or an air jet on the inner surface of the label.

5. Machine for forming labels and inserting
15 bottles or containers into formed tubular labels of the type comprising a roundabout rotating around its vertical axis and supporting a plurality of plates rotating around their respective vertical axis and evenly distributed in a peripheral region of said
20 roundabout, bottles or containers to be labelled supplied from conveyors are located on said plates, each plate being provided with an idle bell-shaped element for centering and restraining the bottle on the plate during the labelling step, further
25 comprising an assembly (4 and 5) for forming and

transferring precut labels made of a reeled film, characterized by the fact it comprises:

- 5 - a plurality of plates (3), each plate consisting of a tubular element (3b) whose side surface is provided with a plurality of holes (10) connectable to vacuum means for establishing a negative pressure during the step of transferring a precut label and the step of winding said label on said tubular element on the plate;
 - 10 - sealing means (30) movable near the tubular plate (3) along the overlapped ends of the precut label wound on said tubular plate;
 - 15 - blowing means connectable to the plurality of holes (10) on the side surface of the tubular plate for removing the tubular label from the tubular plate;
 - 20 - means for lowering the tubular plate and the bottle supported on it into the tubular label.
6. Machine according to claim 5 characterized by the fact that the means for lowering the tubular plate are formed by an annular cam (17) supporting a rotating shaft (11) carrying the tubular plate.
7. Machine according to claim 5 characterized by the fact that it comprises an additional cam (49) driving the downward movement of the bell-shaped

element overhanging the plate simultaneously with the downward movement of the tubular plate determined by the cam (17).

8. Machine according to claim 5 characterized by the fact that it comprises a cycloidal cam driving the tubular plate rotation by intermediate cinematic mechanisms, the profile of said cam being adapted to transfer the preformed label from the assembly (4 and 5) to the plate (3) at a constant speed.

- 10 9. Machine according to claim 5 characterized by the fact that the rotation of the transfer drum (5) has a different phase from that of the rotation of the roundabout (1).